## CLAIMS

That which is claimed is:

1. A method of correlating measurements of the same group of properties taken by different platforms, said method comprising the steps of:

representing measurement values of each platform as a vector, respectively, wherein a position of each measurement value in a vector corresponds to the same position in all other vectors and measures the same property;

calculating a virtual platform with corresponding value positions containing ensemble values representative of the measurement values in all platform vectors at the corresponding positions; and

ordering and scaling the ensemble values in the virtual platform.

2. The method of claim 1, further comprising constructing surrogate values to represent the true values of the properties being measured, to provide consensus-correct ordering of the platform vectors.

3. The method of claim 2, wherein said surrogate values, s are functionally related to the measured values of each platform as follows:

$s = \sum_{j=1}^{n} c_j f_j, c_j \geq 0, j = 1,...,n$ , such that for a given value of s, all platforms $(f_j, j = 1,...,n)$ have a unique value and is a monotonic, non-constant function of s.

4. The method of claim 1, wherein at least one of the measurement values in at least one of the platform vectors is missing or invalid, said method further comprising imputing a value for each said missing or invalid measurement value and inserting the imputed value in a position in which said missing or invalid measurement value occurs, respectively.

5. The method of claim 4, wherein said imputing is performed by at least one of manually imputing and performing a series of univariate regressions.

6. The method of claim 4, wherein the imputed values comprise most-likely expected values.

7. A method comprising forwarding a result obtained from the method of claim 1 to a remote location.

8. A method comprising transmitting data representing a result obtained from the method of claim 1 to a remote location.

9. A method comprising receiving a result obtained from a method of claim 1 from a remote location.

10. A method of creating conversion evaluations for cross-platform comparisons of data values as read by n multiple platforms, said method comprising the steps of:

creating an estimated profile vector for each dataset outputted by each platform respectively;

combining the vector profiles to create a virtual profile covering a total range of all data values;

fitting each platform j for j = 1to n, against all other platforms k, for k = 1 to n -1, to extend and improve each estimate of each estimated profile vector;

calculating surrogate values s as a function of a summation of the fitted platforms; and

solving for a function $f_j$ by regressing against s using an appropriate functional form such that $f_j$, for j = 1 to n, is a monotonic, non-constant function of s.

11. The method of claim 10, further comprising imputing data values for missing or invalid data values in each dataset corresponding to each said platform prior to said creating an estimated profile vector for each dataset.

12. The method of claim 10, further comprising linearizing quantitative regions of data for each platform.

13. The method of claim 12, wherein said linearizing is performed based on a logistic dose-response function defined by:

$$Ln[(\max + d - signal)/(signal - \min - d)] = b + m * c \qquad (6)$$

where

max = the saturation level signal;

d = tolerance for random error:

signal = platform scanner;

min = lowest concentration signal;

b = a locator for the concentration that creates a signal that is 50% between min and max;

m = the slope of ln signal versus ln concentration at b, which is a measure of sensitivity; and

c = ln (concentration of the analyte) ;

and where the dose-response curve is not flat (i.e., non-zero slope).

14. The method of claim 10, wherein said fitting each platform j against all other platforms is performed by weighted multivariate regression.

15. The method of claim 14, wherein the weighted multivariate regression is performed according to the formula:

$$SSQ_j = \sum_{k=1}^{m} \frac{(y_{jk} - f_{jk})^2}{\nabla f_{jk}^{'} V \nabla f_{jk}}$$

where

$SSQ_j$ is the resulting profile given by the multivariate regression;

$m$ = n-1;

$y$ is the estimated platform signal derived from univariate regression;

$f$ is the multivariate model function;

$\nabla$ is the vector gradient operator; and

$V$ is a diagonal variance matrix.

16. The method of claim 15, further comprising calculating a total objective

function according to the following:

$$SSQ = \sum_{j=1}^{n} SSQ_j .$$

17. The method of claim 16, further comprising determining whether the imputed values have stabilized by comparing current imputed values with a previous set of imputed values, wherein said fitting each platform j against all other platforms by multivariate regression is iterated when it is determined that the imputed values have not yet stabilized, and wherein, when it is determined that the imputed values have stabilized, calculating s as follows:

$$s = \sum_{j=1}^{n} c_j f_j, c_j \geq 0, j = 1,...,n .$$

18. The method of claim 17, further comprising solving for a function $f_j$ after calculating s, wherein $f_j$ relates data values from a platform j as a monotonic non-constant function of s, as follows:

$$f_j = \min_j + \frac{\max_j - \min_j}{1 + \exp(-\beta_j[s - \alpha_j])} .$$

19. The method of claim 18, further comprising solving for any $f_k$ from any given $f_j$ by:

solving for s from $f_j$; and

solving for $f_k$ based on the solution from said solving for s from $f_j$ using respective sigmoid form factors for $f_j$ and $f_k$.

20. A system for correlating measurements of the same group of properties taken by different platforms, comprising:

means for representing measurement values of each platform as a vector, respectively, wherein a position of each measurement value in a vector corresponds to the same position in all other vectors and measures the same property;

means for calculating a virtual platform with corresponding value positions containing ensemble values representative of the measurement values in all platform vectors at the corresponding positions; and

means for ordering and scaling the ensemble values in the virtual platform.

21. The system of claim 20, further comprising means for constructing surrogate values to represent the true values of the properties being measured, to provide consensus-correct ordering of the platform vectors.

22. The system of claim 21, wherein said surrogate values, s are functionally related to the measured values of each platform as follows:

$s = \sum_{j=1}^{n} c_j f_j, c_j \geq 0, j = 1,...,n$ , such that for a given value of s, all platforms $(f_j, j = 1,...,n)$ have a unique value and is a monotonic non-constant function of s.

23. The system of claim 20, further comprising means for imputing a value for a missing or invalid measurement value and inserting the imputed value in a position in which said missing or invalid measurement value occurs.

24. A system for creating conversion evaluations for cross-platform comparisons of data values as read by n multiple platforms, comprising:

means for creating an estimated profile vector for each dataset outputted by each platform respectively;

means for combining the vector profiles to create a virtual profile covering a total range of all data values;

means for fitting each platform j for j = 1 to n, against all other platforms k, for k = 1 to n -1, using multivariate regression to improve each estimate of each estimated profile vector;

means for calculating surrogate values s as a function of a summation of the fitted platforms; and

means for solving for a function $f_j$ by regressing against s using an appropriate functional form such that $f_j$, for j = 1 to n, is a monotonic non-constant function of s.

25. The system of claim 24, wherein said appropriate functional form comprises a sigmoid form factor.

26. The system of claim 24, further comprising means for imputing data values for missing or invalid data values in each dataset corresponding to each said platform prior to said creating an estimated profile vector for each dataset.

27. The system of claim 24, further comprising means for linearizing quantitative regions of data for each platform.

28. The system of claim 26, further comprising means for determining whether the imputed values have stabilized by comparing current imputed values with a previous set of imputed values.

29. The system of claim 28, further comprising means for calculating surrogate values, s, when it has been determined that the imputed values have stabilized.

30. The system of claim 29, further comprising means for solving for a function $f_j$ which relates data values from a platform j as a monotonic non-constant function of s.

31. A computer readable medium carrying one or more sequences of instructions for correlating measurements of the same group of properties taken by different platforms, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform the steps of:

representing measurement values of each platform as a vector, respectively, wherein a position of each measurement value in a vector corresponds to the same position in all other vectors and measures the same property;

calculating a virtual platform with corresponding value positions containing ensemble values representative of the measurement values in all platform vectors at the corresponding positions; and

ordering and scaling the ensemble values in the virtual platform.

32. The computer readable medium of claim 31, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform the further step of: constructing surrogate values to represent the true values of the properties being measured, to provide consensus-correct ordering of the platform vectors.

33. The computer readable medium of claim 31, wherein at least one of the measurement values in at least one of the platform vectors is missing or invalid, and wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform the further step of: imputing a value for each said missing or invalid measurement value and inserting the imputed value in a position in which said missing or invalid measurement value occurs, respectively.

34. A computer readable medium carrying one or more sequences of instructions for creating conversion evaluations for cross-platform comparisons of data values as read by n multiple platforms, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform the steps of:

creating an estimated profile vector for each dataset outputted by each platform respectively;

combining the vector profiles to create a virtual profile covering a total range of all data values;

fitting each platform j for j = 1to n, against all other platforms k, for k = 1 to n -1, to improve each estimate of each estimated profile vector;

calculating surrogate values s as a function of a summation of the fitted platforms; and

solving for a function $f_j$ by regressing against s using an appropriate functional form such that $f_j$, for j = 1 to n, is a monotonic non-constant function of s.

35. The computer readable medium of claim 34, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform the further step of: imputing data values for missing or invalid data values in each dataset corresponding to each said platform prior to said creating an estimated profile vector for each dataset.

36. The computer readable medium of claim 35, wherein execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform the further step of: determining whether the imputed values have stabilized by comparing current imputed values with a previous set of imputed values, wherein the

further steps of iterating said fitting each platform j against all other platforms k when it is determined that the imputed values have not yet stabilized, and wherein, when it is determined that the imputed values have stabilized, execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform the further step of: calculating s as follows:

$$s = \sum_{j=1}^{n} c_j f_j, c_j \geq 0, j = 1,...,n .$$

37. The computer readable medium of claim 36, wherein, when s has been calculated after it is determined that the imputed values have stabilized, execution of one or more sequences of instructions by one or more processors causes the one or more processors to perform the further step of: solving for a function $f_j$ which relates data values from a platform j as a monotonic non-constant function of s.